

COPLANAR WAVEGUIDE BIOSENSOR FOR DETECTING MOLECULAR OR CELLULAR EVENTS

ABSTRACT OF THE DISCLOSURE

A coplanar waveguide biosensor includes a one-port coplanar waveguide transmission line and a sample containment structure. The coplanar waveguide transmission line is operable to support the propagation of an electromagnetic signal and includes a signal line and one or more spaced apart ground elements. The signal line is configured to conduct a time-varying voltage, and the one or more ground elements are configured to maintain a time-invariant voltage, a detection region being formed between a portion of the signal line and a portion of at least one of the one or more ground elements. The sample containment structure intersects the detection region of the one-port coplanar waveguide transmission line and includes a cavity configured to hold 1 ml or less of sample solution within the detection region.